Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) An optical sensor characterized by comprising a photoconductive material, which generates a carrier inside when irradiated with a light or an electromagnetic wave, and a carbon nanotube, and by sensing said carrier, which is generated within said photoconductive material by irradiation of said light or electromagnetic wave, through change of electrical conduction of said carbon nanotube.

2. (Currently Amended) An optical sensor according to Claim 1, characterized by comprising a ~~monolayer~~ single layer structure or a multilayer structure serving as said photoconductive material, where said ~~monolayer~~ single layer structure or said multilayer structure is made of a plurality of kinds of photoconductive materials having photoconductivity in different wavelength ranges.

3. (Original) An optical sensor according to Claim 2, characterized in that said multilayer structure includes layers of a photoconductive material having a wider energy gap at the side being irradiated with a light or an electromagnetic wave.

4. (Currently Amended) An optical sensor according to ~~any one of Claims 1 through 3~~ Claim 1, characterized in that a transparent or translucent insulating layer is formed between said photoconductive material and said carbon nanotube.

5. (Currently Amended) An optical sensor according to ~~any one of Claims 1 through 4~~ Claim 1, characterized in that said optical sensor has a field effect transistor structure or a single electron transistor structure.

6. (Original) An optical sensor according to Claim 5, characterized in that said field effect transistor structure is a structure in which a gate electrode is provided under said photoconductive material.

7. (Original) An optical sensor according to Claim 5, characterized in that said field effect transistor structure is a structure in which a gate electrode is provided above said carbon nanotube.

8. (Original) An optical sensor according to Claim 5, characterized in that said field effect transistor structure is a structure in which a gate electrode is provided near said carbon nanotube.

9. (Currently Amended) An optical sensor according to ~~any one of Claims 1 through 8~~ Claim 1, characterized in that electrodes connected to opposite ends of said carbon nanotube are provided, and said two electrodes have a comb-like shape and are disposed to be opposed to each other, while a large number of carbon nanotubes including said carbon nanotube are connected in parallel between said two electrodes.

10. (Currently Amended) An optical sensor according to ~~any one of Claims 1 through 9~~ Claim 1, characterized in that a condenser is disposed on a side where said optical sensor is irradiated with said light or electromagnetic wave.

11. (New) An optical sensor according to Claim 2, characterized in that a transparent or translucent insulating layer is formed between said photoconductive material and said carbon nanotube.

12. (New) An optical sensor according to Claim 3, characterized in that a transparent or translucent insulating layer is formed between said photoconductive material and said carbon nanotube.

13. (New) An optical sensor according to Claim 2, characterized in that said optical sensor has a field effect transistor structure or a single electron transistor structure.

14. (New) An optical sensor according to Claim 3, characterized in that said optical sensor has a field effect transistor structure or a single electron transistor structure.

15. (New) An optical sensor according to Claim 4, characterized in that said optical sensor has a field effect transistor structure or a single electron transistor structure.

16. (New) An optical sensor according to Claim 2, characterized in that electrodes connected to opposite ends of said carbon nanotube are provided, and said two electrodes have a comb-like shape and are disposed to be opposed to each other, while a large number of carbon nanotubes including said carbon nanotube are connected in parallel between said two electrodes.

17. (New) An optical sensor according to Claim 3, characterized in that electrodes connected to opposite ends of said carbon nanotube are provided, and said two electrodes have a comb-like shape and are disposed to be opposed to each other, while a large number of carbon nanotubes including said carbon nanotube are connected in parallel between said two electrodes.

18. (New) An optical sensor according to Claim 4, characterized in that electrodes connected to opposite ends of said carbon nanotube are provided, and said two electrodes have a comb-like shape and are disposed to be opposed to each other, while a large number of carbon nanotubes including said carbon nanotube are connected in parallel between said two electrodes.

19. (New) An optical sensor according to Claim 5, characterized in that electrodes connected to opposite ends of said carbon nanotube are provided, and said two electrodes have a comb-like shape and are disposed to be opposed to each other, while a large number of carbon nanotubes including said carbon nanotube are connected in parallel between said two electrodes.

20. (New) An optical sensor according to Claim 2, characterized in that a condenser is disposed on a side where said optical sensor is irradiated with said light or electromagnetic wave.